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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,645	10/24/2000	John Stevens Merriam JR.	Merriam 3	2071
47549	7590	05/31/2006	EXAMINER	
PRIEST & GOLDSTEIN, PLLC 5015 SOUTHPARK DRIVE SUITE 230 DURHAM, NC 27713			CHANG, EDITH M	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/695,645

Applicant(s)

MERRIAM, JOHN STEVENS

Examiner

Edith M. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office action is resent to the new address and restarted the response time according to the new mailing date of this Office action.

### ***Drawings***

2. The drawings were received on January 24, 2005. These drawings are accepted.

### ***Response to Arguments/Remarks***

3. Applicant's arguments, see pages 41-43, filed on January 24, 2005, with respect to the rejection(s) of claim(s) 1-22 under U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Krasner et al. (US 6,298,098 B1) and the admitted prior art.

### ***Claim Objections***

4. Claims 1-24 are objected to because of the following informalities:  
Claims 1-2 & 12, line 3: "flexibly centered" is suggested changing to "centered".  
Claim 1, line 8: "the entire upstream band" is suggested changing to "the upstream band"; line 10: "the band of" is suggested changing to "the upstream band of".  
Claim 11, line 3: "the entire upstream" is suggested changing to "the upstream".

Claim 12, line 8: "entire upstream" is suggested changing to "upstream";  
line 9: "the band" is suggested changing to "the upstream band".

Claim 18, line 3: "the band" is suggested changing to "the upstream band".

Claim 19, line 2: "the steps of" is suggested changing to "the step of"; line 3:  
"smaller" is suggested changing to "the smaller".

Claim 20, line 2: "smaller portion" is suggested changing to "smaller portions".

Claim 22, line 5: "the entire upstream" is suggested changing to "the  
upstream"; line 7: "the sampled data" is suggested changing to "the sampled analog  
signal"; "by one or more" is suggested changing to "the one or more".

Claims 3-10, 13-18, 21 and 23-24 are directly and indirectly dependent  
on objected claims 1 and 12.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing  
out and distinctly claiming the subject matter which the applicant regards as  
his invention.

6. Claims 2-3 and 12-24 are rejected under 35 U.S.C. 112, second  
paragraph, as being indefinite for failing to particularly point out and distinctly  
claim the subject matter which applicant regards as the invention.

Claim 2, lines 2-3: "the non-overlapping upstream channels" lacks  
antecedent

basis.

Claim 12, lines 4, 5 & 12: "the channels", "each channel" and "each non-overlapping channel" lack antecedent bases.

Claim 19, line 5: "each non-overlapping channel" lacks antecedent basis.

Claims 3, 13-18, 20-22 and 24 are dependent on the rejected claim 12.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6, 11-17 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasner et al. (US 6,298,098 B I) in view of the admitted prior art (Admission).

Regarding **claims 1, 4-6, 11-12, 15-17 & 21-22** in FIG.1 Krasner et al. teaches a hybrid fiber/coax upstream communication system (column 2 lines 19-21) with a demodulator 16 (details shown in Fig.3) and its method over the bi-direction community antenna television (CATV) cable channels (column 1 lines 13-16), the system comprises the demodulator 16 in a Headend 12 receiving signals/streams sent from subscriber's transmitter (10) via the CATV channels. In Fig.3, Krasner et al. teaches the demodulator 16 comprises the A/D Converter 30 digitizing the analog received signals/streams to the digital format (steps D & E); the Filter, and the Down

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Converter 32 (as the receiver front end); and the Decimator accept (steps A & E) the digitized received signals/streams, then filter, down convert (step B) and decimate (step C) the digital received signals/streams (column 3 lines 60-64) to provide a digital baseband signal (column 3 lines 57-63, the baseband signal has a baseline center frequency) and the Nyquist filter 34 inputs the output of the Filter/Down Converter/Decimator (32) to provide a proper rate digital baseband signal (step C3 to meet the Nyquist sampling criteria). However Krasner et al. does not explicitly show the sub-channeling of Data Over Cable Service Interface Specification (DOCSIS) standard.

The admitted prior art teaches the DOCSIS 37 MHz (5 to 42 MHz) upstream band divided into non-overlapping channels with bandwidths (3.2, 1.6, 0.8, 0.4 or 0.2 MHz) and the non-overlapping channels assigned with center frequencies to avoid interferences (page 2 the first paragraph of background of the invention of the current application). Since Krasner et al.'s demodulator and method are for transmitting and receiving over the cable TV channels to multiple subscribers (Fig.1, column 2 lines 36-42 wherein there are multiple frequency channels for the upstream communication from subscribers) of a hybrid fiber/coax (HFC) cable network, therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to have the DOCSIS sub-channeling (for the multiple frequency channels) as stated in the admitted prior art to equip Krasner et al.'s demodulator to compliant with the DOCSIS standard designed to facilitate the implementation of data service over HFC cable networks and for the purpose of reducing the interference (the last two sentences of

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the first paragraph of background of the invention on page 2 of the current application).

Regarding **claims 2-3, 13-14 & 20**, the Krasner et al.'s system modified with the DOCSIS sub-channeling taught by the admitted prior art discloses multiple down converters in the multi-band (non-overlapping channels) receiver. It is well known in the art that a single baseband receiver as a multi-band operable receiver has multiple down converters (Filter/Down Converter/Decimators, steps B1, C1 & C2) for assuring minimizing the mean time to intercept and maximizing the probability of intercept. Regarding claims 23 & 24, it is well known in the art that the baseband frequencies of an information signal at is from zero frequency to the highest information frequency, hence the baseline center frequency of the baseline signal bandwidth is zero Hz.

9. Claims 7-10 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasner et al. (US 6,298,098 B I) in view of the admitted prior art (Admission) as applied to claims 1 and 12 above, and further in view of Tourtier et al. (US Patent 5,446,495).

Regarding claims **7-10** and **18-19**, further Tourtier et al. teaches a tree-structure of band splitting in FIG.7 to convert and decimate the channels in the frequency band repeatedly to the baseband for quantization circuits 28 (column 7 lines 20-30). The filter bank SB (26, 27...) performs decimating (column 7 lines 19-25) wherein the band of original data is down converted to sub-bands on lines 1 and 3 by SB 26, then the

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data on line 1 is down converted to sub-bands 5, 6, and 7 by SB 27, and data on line 3 (bands 1, 2,3) is further down converted, hence the down converting as shown in FIG.7 is in the tree hierarchy. As Krasner et al.'s system modified with the DOCSIS sub-channeling taught by the admitted prior art receiving the multiple frequency CATV channels over the band 5-42 MHz, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the tree-structure TV signal sub-band decoder arrangement taught by Tourtier et al. in Krasner et al.'s demodulator for the purpose to down convert the video/TV signals with different formats in different frequency bands simply and efficiently and be able to process the signals independently (column 3 lines 30-35, lines 40-50).

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Reference Bryant (US 4,555,807) is made of record as describing a baseband system having a plurality of down converters; reference Hartson et al. (US 6,433,835) is made of record as describing the baseband frequencies of the baseband signal; reference Franchvill et al. (US 6,041,076) is made of record as describing the digitizing CATV having a sampling rate that exceeds twice the highest frequency component of the received signal; and reference Shalvi et al. (US 6,647,070) is made of record as describing DOCSIS used in CATV.



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11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

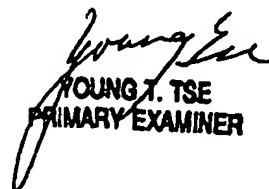
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang  
April 27, 2005

  
YOUNG T. TSE  
PRIMARY EXAMINER